Amendments to the Specification:

Please amend the paragraph beginning at page 8 line 1 as follows.

~~Figure 12~~Figures 12a-c illustrates a cross-sectional view of the layers of the cartridge used in Experiment 3.

Please amend the paragraph beginning at page 11 line 4 as follows.

The resin bed 34, in part, functions to remove waste. In this regard, generally waste is removed using a two-step process. The steps consist of an enzymatic conversion of urea using urease followed by subsequent removal of the conversion byproducts. In the enzymatic reaction, one mole of urea is decomposed into two moles of ammonia and one mole of carbon dioxide. Ammonia (NH_3) is primarily (>95%) present as ammonium ion (NH_4^+), since its ~~pKa~~ pH of 9.3 is substantially greater than the solution pH. The carbon dioxide that is formed can either be present as dissolved carbon dioxide or as bicarbonate ion, depending on the solution pH. Since the ~~pKa~~ pH for this equilibrium is 6.1, both species may be present in substantial quantities under conditions of use. In addition, if the solution is in communication with a gas phase, the dissolved carbon dioxide is in equilibrium with the carbon dioxide present in the gas phase.

Please amend the paragraph beginning at page 14 line 31 as follows.

Referring now to the zirconium oxide layer, zirconium oxide resin is an amphoteric resin. This means that the resin's ion exchange properties are dependent on the solution pH. If the solution pH is much lower than the ~~pI~~ pH of the resin, the resin acts as an anion exchange resin. If the solution pH is much greater than the ~~pI~~ pH of the resin, the resin acts as a cation exchange resin. If the solution pH is near its pH, the resin demonstrates properties of a mixed bed, exchanging both cations and anions. This latter behavior of a mixed bed occurs throughout the physiologic pH range.